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The DSM-5 diagnostic criteria for anorexia nervosa may change its population prevalence and prognostic value

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ABSTRACT

The definition of anorexia nervosa was revised for the Fifth Edition of the Diagnostic and Statistical Manual (DSM-5). We examined the impact of these changes on the prevalence and prognosis of anorexia nervosa. In a nationwide longitudinal study of Finnish twins born 1975−1979, the women (N = 2825) underwent a 2-stage screening for eating disorders at mean age 24. Fifty-five women fulfilled DSM-IV criteria for lifetime anorexia nervosa. When we recoded the interviews using DSM-5 criteria, we detected 37 new cases. We contrasted new DSM-5 vs. DSM-IV cases to assess their clinical characteristics and prognosis. We also estimated lifetime prevalences and incidences and tested the association of minimum BMI with prognosis. We observed a 60% increase in the lifetime prevalence of anorexia nervosa using the new diagnostic boundaries, from 2.2% to 3.6%. The new cases had a later age of onset (18.8 y vs. 16.5, p = 0.002), higher minimum BMI (16.9 vs. 15.5 kg/m^2, p = 0.0004), a shorter duration of illness (one year vs. three years, p = 0.002), and a higher 5-year probability or recovery (81% vs. 67%, p = 0.002). Minimum BMI was not associated with prognosis. It therefore appears that the substantial increase in prevalence of anorexia nervosa is offset by a more benign course of illness in new cases. Increased diagnostic heterogeneity underscores the need for reliable indicators of disease severity. Our findings indicate that BMI may not be an ideal severity marker, but should be complemented by prognostically informative criteria. Future studies should focus on identifying such factors in prospective settings.

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1. Introduction

Anorexia nervosa is a serious and potentially fatal illness (Walsh 2013). The definition of anorexia nervosa was recently revised for the DSM-5 (American Psychiatric Association 2013). One of the leading reasons for the revision was to reduce the number of patients who receive the diagnosis eating disorder not otherwise specified (EDNOS), who constituted up to 60% of patients in specialized eating disorder units (Fairburn & Bohn 2005; Zimmerman et al., 2008).

DSM-5 introduced three changes to the criteria defining anorexia nervosa: the weight loss criterion was revised, fear of weight gain does not need to be verbalized if behaviors interfering with weight gain can be observed, and amenorrhea was no longer required (American Psychiatric Association 2013; Attia et al., 2013). These diagnostic changes were supported by a number of studies that found few differences in demographics, eating disorder pathology, and psychiatric comorbidity between patients who meet strict diagnostic criteria for anorexia nervosa and their

subthreshold counterparts (Eddy et al., 2008; Helverskov et al., 2011; Thomas et al., 2009).

Another new feature in the DSM-5 is the introduction of a body mass index (BMI) based severity rating. Previous research has shown that BMI-based severity is associated with disorder detection and access to treatment, but not with recovery rates (Smink et al., 2014).

A consensus reigns that the recent diagnostic changes in the DSM will increase the proportion of patients with anorexia nervosa and decrease the number of residual diagnoses (Machado et al., 2013; Ornstein et al., 2013; Keel et al., 2011; Nakai et al., 2013; Birgegard et al., 2012). Among community-based adolescents, the prevalence of anorexia nervosa increased by 50% (Smink et al., 2014). However, the impact of the changes has not been quantified in adult women. Furthermore, no previous studies have assessed the prognostic value of the diagnostic changes. Finally, there is little empirical evidence to substantiate the BMI-based severity assessment in anorexia nervosa. To address these questions, we conducted a nationwide population-based study to quantify the impact of recent changes in diagnostic criteria on the prevalence, incidence rate and prognosis of anorexia nervosa. We also examined the prognostic value of the BMI-based severity rating.

2. Method

2.1. FinnTwin16 birth cohorts

This nationwide longitudinal cohort study of health behaviors in twins and their families (Kaprio et al., 2002) identified twin births in 1975–79 from the central population register of Finland. The FinnTwin16 cohort was restricted to those pairs who both were alive at age 16 and resident in Finland. Data collection and analysis were carried out in accordance with the latest version of the Declaration of Helsinki and approved by the ethics committee of the Department of Public Health of University of Helsinki.

The twins and their parents were sent baseline self-report questionnaires when the twins were 16 y (wave 1). A returned questionnaire implied informed consent. Follow-up questionnaires were mailed to the twins when they were 17 y (wave 2), 18 y (wave 3), 22–27 y (wave 4), and finally 31–37 y (wave 5) (Kaprio 2013; Kaprio 2006). The analyses in the present paper are based on wave 4 when diagnostic interviews were conducted. Because of the dynamic nature of our cohort, after mortality updates, central database checks, and database cleaning, some totals differ slightly from those previously published (Keski-Rahkonen et al., 2007).

2.2. Screening for eating disorders, wave 4

At age 22–27 y (mean 24.4, SD 0.9), 2825 women (87% of the original cohort) returned their questionnaire that contained a self-report screen for eating disorder symptoms (Keski-Rahkonen et al., 2006). It included three subscales of the Eating Disorder Inventory (Garner 1991) self-reported eating disorders, eating disorder suspected by others, and questions on current and past minimum weight. Operational criteria for screen positive and negative participants have been described in detail previously (Keski-Rahkonen et al., 2006; Mustelin et al., 2015). We also asked the participants permission to interview them by telephone: if they consented to the interview, they sent us their phone number. All screen-positive women (N = 292), their screen-negative female co-twins (N = 130), and 210 randomly selected screen-negative women were invited to participate in diagnostic telephone interviews. The overall interview participation rate was 86.7%. Details of interview participation and diagnosed cases in each group are described in the Supplementary Figure. We found no evidence of non-response bias for interview participation: None of the screening measures differed significantly between participants and non-participants (Mustelin et al., 2015).

2.3. DSM-IV diagnoses

Five experienced clinicians, four MDs and one registered nurse from the Eating Disorder Unit of Helsinki University Central Hospital, conducted the interviews by telephone using the Structured Clinical Interview for DSM-IV (SCID) interview (First et al., 2003) to obtain current and lifetime diagnoses of anorexia nervosa, bulimia nervosa, binge-eating disorder, and major depressive disorder. Interrater agreement for diagnosis was good (mean κ = 0.87, range 0.64–1.00) (Keski-Rahkonen et al., 2006). Based on SCID interviews, we identified 55 probands suffering from anorexia nervosa as defined in DSM-IV. Criterion 'A' was met if weight loss resulted in a BMI of <17.5 kg/m^2 (Keski-Rahkonen et al., 2007).

2.4. DSM-5 diagnoses

Four MDs experienced in the diagnosis and treatment of eating disorders (AKR, AR, YS, LM) established consensus DSM-5 diagnoses by recoding the DSM-IV SCID interviews. The interviewers had written down the participants' self-reported minimum, maximum, and current weights, the interviewee's explanations for her weight status, and a narrative summarizing the time course of the symptoms and any special circumstances or considerations. The recoding was based on careful examination of each diagnostic criterion, taking into account all relevant information supplied in the case notes recorded by the interviewers. Criterion 'A' was met if weight loss resulted in a minimum BMI of <18.5 kg/m^2 following the WHO definition of underweight, a cut-off recommended to be used both in clinical interviews (Sysko et al., 2015) and epidemiological research (Brown et al., 2014). Criterion 'B' was met if it was apparent (based on the interview and the case notes) that the interviewee experienced intense fear of gaining weight or becoming fat or persistent behaviors that interfered with weight gain (American Psychiatric Association 2013). Similarly, criterion 'C' was met if the interviewee exhibited a disturbance in the way in which her body weight or shape was experienced, undue influence of body weight or shape on self-evaluation, or persistent lack of recognition of the seriousness of being at low weight (American Psychiatric Association 2013). Individuals whose weight loss could be explained by a medical illness did not receive a diagnosis of anorexia nervosa.

2.5. Case definition

The new DSM-5 category includes all DSM-IV cases as well as new cases that did not fulfill DSM-IV criteria. We compared cases fulfilling DSM-5 criteria but not DSM-IV criteria (from here on referred to as 'new DSM-5 cases') to DSM-IV cases.

2.6. Assessment of recovery

For each case of anorexia nervosa, the interviewers determined the last age at which any eating disorder symptoms occurred. We defined clinical recovery as restoration of weight and menstrual function (if applicable) and the absence of binges and purges for at least 1 year prior to assessment (Keski-Rahkonen et al., 2007). The 5-year clinical recovery rate was defined as the proportion of women with anorexia nervosa who reached clinical recovery within 5 years after onset.